Abstract ID : 50

Title : POPULATION DYNAMICS OF THE SOUTHEASTERN PACIFIC HUMPBACK WHALE (MEGAPTERA NOVAEANGLIAE) STOCK OFF ECUADOR

Category : Ecology

Student : M.A./M.S.

Preferred Format : Poster Presentation

Abstract : Southeastern pacific humpback whales (Megaptera novaeangliae) migrate to waters off Ecuador to breed and rear their offspring. The size of this stock has been estimated to be between 400 and 2,700 individuals. However, information on vital rates (survival, mortality, and birth) as well as population trends are scarce. A simulation model using STELLA II software (version 3.0.6) was performed in order to know the population trend of humpback whales reproducing off Ecuador. The diagram of the population balance model was established by using compartments (stocks), connectors, converters and flows available from the software. Preliminary annual mortality (kd) and birth (kb) rates were estimated from the literature available, and a preliminary rate of population growth (r) was also determined with the Leslie matrix model. Survival rates were estimated at 0.97 and 0.94 for adult and non-adult individuals, respectively. The preliminary annual average birth and mortality rates were 0.20 (SD = 0.21) and 0.045 (SD = 0.015), respectively. The birth interval had a range of 1.6-5 years. The simulation model yielded a logistic population growth curve, reaching the carrying capacity when the population was at about 12,000 individuals. The preliminary intrinsic rate of population increase (r) was 0.127, estimating an average increase of 13% per year for this stock. Future work is required to continue estimating trends and vital rates of this stock with more accuracy data from the field. Minimum population estimate (Nmin), current and maximum net productivity rate (Rmax), and potential biological removal (PBR) must be also considered in the assessment of the Southeastern Pacific stock in future studies.